

# Appendix C-1

## MCPS Role in County Land Use Planning, Zoning, Subdivision Review, and Subdivision Staging Policy

Montgomery County Public Schools (MCPS) collaborates with the Montgomery County Planning Department (MCPD), the Montgomery County Planning Board (Planning Board), the Montgomery County Hearing Examiner, and the Montgomery County Council (County Council) in a range of planning activities that impact school enrollment and facility needs. These activities are discussed below, from the more general and long-range activities to the more specific and short term activities.

### County Land Use Planning

The Planning Board, working with MCPD staff, creates local master plans and sector plans to set forth the land use vision for those areas. The sequence of steps in the development of master plans begins with the MCPD staff development of plan scenarios and collection of community input. At this early stage, and throughout the plan development process, MCPS staff provides MCPD staff with estimates of the number of students that will be generated under various housing scenarios. If housing scenarios generate enough students to require one or more school sites, then these sites are included within the plan area. The MCPD staff recommended plan works its way through Planning Board review and recommendation. Finally, the County Council reviews the Planning Board recommended plan, making any changes it deems appropriate. Ultimately, the County Council takes action to approve the plan.

The identification of school sites is the primary form of input MCPS provides on land use plans. MCPS monitors the implementation of land use plans once they are approved, and works in close coordination with the MCPD staff and developers to ensure changes in land use are incorporated in school facility plans.

### Zoning

The implementation of master plans does not occur until the County Council approves a Sectional Map Amendment (SMA). An SMA is a comprehensive action that identifies various zones to be applied to individual tracts of land, as recommended in the master plan. Once the SMA is adopted, property owners have the right to subdivide their properties according to the zoning. On occasion, property owners may request rezoning of their land to allow projects that they believe are consistent with the intent of the master plan. MCPS provides comments on rezoning applications that include housing. These comments include estimates of the number of students that would be generated under the proposed rezoning and the projected utilization levels of schools that serve the property in question. These comments

are submitted to MCPD staff during the review of the rezoning, and as requested, to the County Hearing Examiner during review of the rezoning request.

### Subdivision Review and Subdivision Staging Policy

Subdivision plans are submitted by property owners when they are ready to develop their land. Subdivisions are reviewed by MCPD staff and modifications to the plans may be worked out between staff and property owners prior to the plan going to the Planning Board for approval. Once a preliminary plan is complete, a public hearing is held before the Planning Board and action is taken. The Planning Board has the sole authority for review and approval of subdivision applications.

There are numerous considerations that come into play in reviewing a subdivision plan. The Planning Board must determine if a proposed subdivision is consistent with the area master plan and zoning of the property. The Planning Board also must determine if the area of development is “open” to subdivision approval given the results of the Adequate Public Facilities Ordinance (APFO) and Subdivision Staging Policy. MCPS staff also provides comments on the impact of subdivisions that abut school system property. Once a preliminary plan of subdivision is approved by the Planning Board, an estimate of the number of students the plan will generate is incorporated in enrollment projections for schools that serve the property. Appendix C-2 describes how enrollment projections are developed.

Since 1973 the Montgomery County subdivision regulations have included the APFO, with the goal of synchronizing development with the availability of public facilities. (County Code, Section 50.) In response to strong growth pressures in the mid-1980s, the County Council enacted legislation to direct the Planning Board’s administration of the APFO. This legislation was known as the County Growth Policy through 2010. The policy is now called the Subdivision Staging Policy and reflects action by County Council on November 15, 2016. The role of the Subdivision Staging Policy is to stage subdivision approvals commensurate with adequate facility capacity. The two main areas of public facility capacity considered in the policy are schools and transportation facilities.

The County Subdivision Staging Policy, which prescribes the school test of facility adequacy, is reviewed on a four year cycle. The school test of facility adequacy is conducted annually based on the latest enrollment forecast and adopted capital improvements program. The three tiered school test evaluates school

utilization levels in the 25 cluster areas at the elementary, middle, and high school levels and individual middle and elementary school service areas. If school utilizations exceed certain thresholds and there is no programmed capital project or solution project in the capital improvement plan subdivision applications are subject to moratorium. Each year, MCPS prepares the data on cluster school utilizations for the school test, and the Planning Board adopts the results of the school test prior to July 1st. The test results are in place for the following fiscal year. The Subdivision Staging Policy school test thresholds are:

- Subdivision applications in clusters with enrollment levels at or 120 percent utilization of MCPS program capacity in the sixth year of the CIP timeframe may proceed, provided they meet individual school tests. A capital project or placeholder may be included in the CIP as a solution and avoid moratorium.
- Subdivision applications are also subjected to an individual middle school service area test for the school which serves the proposed for development. If the projected enrollment in the sixth year of the CIP exceeds capacity by 180 seats or more and the capacity utilization of the school is greater than 120 percent, the subdivision application may be subject to moratorium. The option also remains for the County Council to add a capacity solution to the CIP and avoid moratorium.
- Subdivision applications are subjected to an individual elementary school service area test for the school which serves the proposed for development. If the projected enrollment in the sixth year of the CIP exceeds capacity by 110 seats or more and the capacity utilization of the school is greater than 120 percent, the subdivision application may be subject to moratorium. The option also remains for the County Council to add a capacity solution to the CIP and avoid moratorium.

## Appendix C-2

# MCPS Enrollment Forecasting

The prediction of school enrollment involves the consideration of a wide range of factors. The makeup of communities is the foremost consideration. In addition, characteristics of schools, such as the programs offered and changes within school service areas (such as new housing), can influence enrollment. Economic activity at the local, regional, and national levels also influences the accuracy of enrollment forecasts. Developing a forecast that extends from 1 to 15 years requires assessment of current local events in light of broader, long-term trends. Forecast accuracy varies depending on the geographic scope of the projection as well as its time span. Accuracy is greatest when enrollment is projected for large areas for the short-term (one or two years in the future). Accuracy in forecasts diminishes as the geographic area projected becomes smaller and as the forecast is made for more distant points in the future. Therefore, a one-year countywide forecast for total enrollment for all schools will have less error than forecasts that extend further into the future for individual schools.

The MCPS enrollment forecast is developed after an annual study of trends at the county and individual school levels. The grade enrollment history of each school is compiled and updated annually. MCPS projections, prepared in the fall of every year, extend through the upcoming ten years for all schools and the fifteenth year in the future for secondary schools. The preliminary September enrollment at each school is used as the basis from which projections are developed. Enrollment projections are merely an estimate of future activity based on the historical data and information reviewed. As demonstrated by the calculations over the past ten years, there can be constant variations in growth. Although these numbers can be highly accurate, it must be remembered that the numbers are still a projection or estimate. It is important to reassess these numbers on an annual basis and adjust capital and non-capital plans accordingly.

During the 2017–2018 school year, the school system worked with an external consultant to develop a new enrollment forecasting methodology. This new methodology allows staff to understand the different factors that affect student enrollment at the individual school level and will allow the school system to identify trends and prepare for adequate space as well as teaching staff and materials. The new methodology includes the following four models: average percentage annual increase; cohort survival; linear regression; and student-per-housing unit models. A weighted average is generated of these four models for each school to develop the enrollment projection. A brief description of each of the four models follows.

### Average Percentage Annual Increase Model

This model calculates future school enrollment growth based on the historical average growth from year to year for each grade level. This simple model multiplies the historical average percentage increase (or decrease) by the prior year's enrollment to project future enrollment estimates.

### Linear Regression Model

This model uses a statistical approach to estimate an unknown future value of a variable by performing calculations on known historical values. Once calculated, future values for different future dates can be plotted along a “regression line” or “trend line”. A “straight-line” regression model to estimate future enrollment values, a model that finds the “best fit” based on the historical data is used.

### Cohort Survival Model

This model calculates the growth or decline between grade levels over a period of ten years based on the ratio of students who attend each of the previous years, or the “survival rate”. This ratio is then applied to the incoming class to calculate the trends in that class as it “moves” or graduates through the school system. The determination of future kindergarten enrollment estimates is critical, especially for projections exceeding more than five years. A model based on the correlation between historical resident birth rates (natality rates) and historical kindergarten enrollment five years later is used.

### Students-Per-Household Model

This model utilizes the estimated number of housing units as its base data. Using the cluster level housing unit and student generation factors from the county, a projected enrollment for the cluster is generated. These projections are then divided up to individual schools in the cluster based on each schools' overall enrollment contribution to the total number of students in the cluster (by grade band K–5, 6–8, 9–12).

Once each of these four base models has been calculated, a weighted average of each of the models is generated for each school. A weighted average provides an analysis to reflect all the trends observed in the historical data and the over-arching themes from the qualitative information gathered in this process. The weighted average also works to maximize the strengths of each of the “base” models.

Because of the uncertainty that surrounds both short- and long-range forecasts, MCPS forecasts are revised each fall. In addition, the one-year forecast is revised each spring. The primary purpose of evaluating the upcoming school year forecast is to increase the

accuracy in making staffing decisions and to place relocatable classrooms where needed. The evaluation assesses the enrollment change in each school from September, when the original forecast was made, to the time of the spring revision. In areas of the county that are developing, an assessment of the rate of housing construction also is made. In some cases, administrative or Board of Education actions, such as a change in a school service area, also may affect enrollment changes.

Continuous efforts are underway to increase the accuracy of forecasting techniques. Advances continue in the use of computers for the retrieval and analysis of demographic and facility planning data. The use of the county Geographic Information System (GIS) contains extensive demographic and land-use data that is used in the forecasting and facility planning processes. Ties between MCPS planners, county planning agencies, the real estate and development communities, and community representatives enable an ongoing exchange of information relevant to forecasting. For example, the recent application of GIS leverages MCPS data and Montgomery Planning data and allows direct measurement of pupil generation rates. This pooled knowledge is a valuable resource in the inherently difficult job of predicting the future.